RCP, Inc

801 Louisiana, Ste.200
Houston, Texas 77002
Redacted

June 13, 2011

Pacific Gas and Electric Company
3600 Adobe Rd
Petaluma, Ca 94954
Attention: Joel Mannie
Attention:

Test Contractor:	Akri Corporation -- 13-100
Asset Owner:	Pacific Gas and Electric Company -- 41474079
Construction Contractor:	ARB -- 0629-53-3500-96
Test Section:	PG&E T-11 Line 105N
Test Date:	June 5, 2011
Certificate Number:	RCP 61362 - T-11, L-105N

To whom it may concern,

This letter is to certify that the hydrostatic test performed on pipe owned by Pacific Gas and Electric Company and tested by Akri Corporation met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3).

Upon initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 833 psig for 30 minutes, without observed leakage or yielding of the pipe segment.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8 continuous hours without evidence of a leak failure. Water was the test medium. At the highest elevation point in the test section, the calculated test pressure was 772 psig and the established MAOP is 515 psig.

Pressure decreased 53 psi during the test. 3,456.00 ounces of fluid was intentionallyreleased from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 121.50 ounces, loss, which is equivalent to a 0.1 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,

Redacted

cc. file

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Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500-96
Hydro. Test Co.	Akri Corporation	Project No.	13-100
Test Section	PG&E T-11 Line 105N		
File Name	RCP 61362 - T-11, L-105N		

Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION: Test Date: 5-Jun-11

Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 3)

This is to certify that the pipeline or pipeline section(s) described below was hydrostatically pressure tested in accordance with the following procedure:

Pipeline:	PG&E T-11 Line 105N		
From:	46+03	To:	0+00

Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	4,591.00 ft	24.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,625 psi
2	15.00 ft	24.000 in.	0.250 in.	API5L-X52, DSAW, Arc Weld, Steel	1,083 psi
3	58.00 ft	24.000 in.	0.375 in.	API5L-X60, DSAW, Arc Weld, Steel	1,875 psi
4	22 ft	24.000 in.	0.500 in.	API5L-X60, SM, Arc Weld, Steel	2,500 psi

Initial Test Conditions

Pressure at Test Point:	833 psig	Date/Time:	6/5/11 8:50 AM	Pipe Temperature	
				Unrestrained:	61.0 °F
Ambient Temperature:	63.0 °F			Restrained:	64.0 °F
		Elevation @ Test Point:	20.0 ft	Location:	46+03
Pressure @ High Point (Cal/Measure):	826 psig	Elevation @ High Point:	37.0 ft	Location:	0+00
Pressure @ Low Point (Cal/Measure):	833 psig	Elevation @ Low Point:	19.0 ft	Location:	45+00

Final Test Conditions

Pressure at Test Point:	780 psig	Date/Time:	6/5/11 5:05 PM	Pipe Temperature	
				Unrestrained:	66.0 °F
Ambient Temperature:	63.0 °F			Restrained:	64.0 °F
		Elevation @ Test Point:	20.0 ft	Location:	46+03
Pressure @ High Point (Cal/Measure):	773 psig	Elevation @ High Point:	37.0 ft	Location:	0+00
Pressure @ Low Point (Cal/Measure):	789 psig	Elevation @ Low Point:	0.1 ft	Location:	156+26
Total Fluid Injected:				Volume loss	
Total Fluid Withdrawn:		3456.00 fluid ounces			
Net Change in Volume of the Test Section ± (+ Gain, - Loss):		(121.50) oz	loss	(0.0009)%	(0.100) °F equivalent

Test Duration:	8 hours					
Maximum Test Pressure:		833 psig				
% SMYS @:	76.9%	Test Point	76.2%	High Point	76.9%	Low Point
					Minimum Test Pressure (Calculated/Measured):	773 psig
		Maximum Allowable Operating Pressure:		DOT Part 192	Test Factor= 1.50	515 psig

Were leaks observed?	**No**	Explain:
Acceptable Hydrostatic Test?	**Yes**	Upon initiation of the hydrostatic test period, the test segment was subjected to a spike pressure of 833 psig for 30 minutes, without observed leakage or yielding of the pipe segment. No leaks were observed during the test period. The test section included 4,606 feet of buried and 80 feet of exposed pipe. Pressure lost 53 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 5°F. 3,456.00 ounces of fluid was intentionally released from the test section Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 121.50 ounces, loss, which is equivalent to a 0.1 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized. Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.
Remarks		

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Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500-96
Testing Co.	Akri Corporation	Project No.	13-100
Test Section	PG&E T-11 Line 105N		
File Name	RCP 61362 - T-11, L-105N		

Date **5-Jun-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	**Comment**	**Bleed**	**Inject**
1	6/5/11	8:36 AM	563 psig	63 °F	61 °F	64 °F	Start Spike		
2	6/5/11	8:36 AM	573 psig	64 °F	61 °F	64 °F			797 oz.
3	6/5/11	8:36 AM	583 psig	65 °F	61 °F	64 °F			797 oz.
4	6/5/11	8:37 AM	593 psig	63 °F	62 °F	64 °F			779 oz.
5	6/5/11	8:37 AM	603 psig	65 °F	62 °F	64 °F			756 oz.
6	6/5/11	8:38 AM	613 psig	64 °F	63 °F	64 °F			573 oz.
7	6/5/11	8:38 AM	623 psig	64 °F	63 °F	64 °F			852 oz.
8	6/5/11	8:39 AM	633 psig	67 °F	64 °F	64 °F			591 oz.
9	6/5/11	8:39 AM	643 psig	67 °F	65 °F	64 °F			733 oz.
10	6/5/11	8:40 AM	653 psig	68 °F	65 °F	64 °F			696 oz.
11	6/5/11	8:40 AM	663 psig	68 °F	65 °F	63 °F			664 oz.
12	6/5/11	8:41 AM	673 psig	69 °F	65 °F	63 °F			683 oz.
13	6/5/11	8:41 AM	683 psig	68 °F	63 °F	66 °F			673 oz.
14	6/5/11	8:42 AM	693 psig	70 °F	66 °F	63 °F			641 oz.
15	6/5/11	8:42 AM	703 psig	71 °F	67 °F	63 °F			605 oz.
16	6/5/11	8:43 AM	713 psig	71 °F	67 °F	63 °F			651 oz.
17	6/5/11	8:43 AM	723 psig	71 °F	67 °F	63 °F			669 oz.
18	6/5/11	8:44 AM	733 psig	70 °F	67 °F	67 °F			618 oz.
19	6/5/11	8:44 AM	743 psig	71 °F	67 °F	63 °F			591 oz.
20	6/5/11	8:45 AM	753 psig	70 °F	67 °F	63 °F			683 oz.
21	6/5/11	8:45 AM	763 psig	67 °F	67 °F	63 °F			550 oz.
22	6/5/11	8:46 AM	773 psig	66 °F	67 °F	63 °F			577 oz.
23	6/5/11	8:46 AM	783 psig	67 °F	67 °F	63 °F			600 oz.
24	6/5/11	8:47 AM	793 psig	66 °F	61 °F	67 °F			591 oz.
25	6/5/11	8:47 AM	803 psig	67 °F	61 °F	64 °F			628 oz.
26	6/5/11	8:48 AM	813 psig	66 °F	61 °F	64 °F			495 oz.
27	6/5/11	8:48 AM	823 psig	63 °F	61 °F	64 °F			541 oz.
28	6/5/11	8:49 AM	833 psig	63 °F	61 °F	64 °F			573 oz.
29	6/5/11	8:50 AM	833 psig	63 °F	61 °F	64 °F	On Test		
30	6/5/11	9:00 AM	833 psig	64 °F	61 °F	64 °F			
31	6/5/11	9:10 AM	833 psig	65 °F	61 °F	64 °F			
32	6/5/11	9:20 AM	833 psig	63 °F	62 °F	64 °F	End Spike		
33	6/5/11	9:35 AM	780 psig	65 °F	62 °F	64 °F		3,456.00 oz.	
34	6/5/11	9:50 AM	780 psig	64 °F	63 °F	64 °F			
35	6/5/11	10:05 AM	780 psig	64 °F	64 °F	64 °F			
36	6/5/11	10:20 AM	781 psig	67 °F	64 °F	64 °F			
37	6/5/11	10:35 AM	781 psig	67 °F	65 °F	64 °F			
38	6/5/11	10:50 AM	781 psig	68 °F	65 °F	64 °F			
39	6/5/11	11:05 AM	781 psig	68 °F	65 °F	63 °F			
40	6/5/11	11:20 AM	781 psig	68 °F	65 °F	63 °F			
41	6/5/11	11:35 AM	781 psig	68 °F	65 °F	63 °F			
42	6/5/11	11:50 AM	781 psig	70 °F	65 °F	63 °F			
43	6/5/11	12:05 PM	781 psig	70 °F	65 °F	63 °F			

Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500-96
Testing Co.	Akri Corporation	Project No.	13-100
Test Section	PG&E T-11 Line 105N		
File Name	RCP 61362 - T-11, L-105N		

Date **5-Jun-11**

Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe				
					Unrestrained	Restrained	**Comment**	**Bleed**	**Inject**
44	6/5/11	12:20 PM	781 psig	71 °F	65 °F	63 °F			
45	6/5/11	12:35 PM	781 psig	71 °F	65 °F	63 °F			
46	6/5/11	12:50 PM	781 psig	70 °F	65 °F	63 °F			
47	6/5/11	1:05 PM	781 psig	71 °F	65 °F	63 °F			
48	6/5/11	1:20 PM	781 psig	70 °F	65 °F	63 °F			
49	6/5/11	1:35 PM	781 psig	70 °F	65 °F	63 °F			
50	6/5/11	1:50 PM	781 psig	67 °F	65 °F	63 °F			
51	6/5/11	2:05 PM	781 psig	67 °F	65 °F	63 °F			
52	6/5/11	2:20 PM	781 psig	67 °F	65 °F	63 °F			
53	6/5/11	2:35 PM	781 psig	66 °F	67 °F	63 °F			
54	6/5/11	2:50 PM	781 psig	67 °F	67 °F	63 °F			
55	6/5/11	3:05 PM	781 psig	66 °F	67 °F	63 °F			
56	6/5/11	3:20 PM	781 psig	66 °F	67 °F	63 °F			
57	6/5/11	3:35 PM	781 psig	65 °F	67 °F	63 °F			
58	6/5/11	3:50 PM	781 psig	65 °F	67 °F	63 °F			
59	6/5/11	4:05 PM	780 psig	65 °F	67 °F	63 °F			
60	6/5/11	4:20 PM	780 psig	64 °F	67 °F	63 °F			
61	6/5/11	4:35 PM	780 psig	63 °F	66 °F	63 °F			
62	6/5/11	4:50 PM	780 psig	63 °F	66 °F	63 °F			
63	6/5/11	5:05 PM	780 psig	63 °F	66 °F	64 °F	End of Test		
							Spike Test		17,606.0 oz.
							Hydrostatic Test	3,456.0 oz.	

Were leaks observed during the test period? Exposed and buried pipe, no leaks observed.

High Test Pressure:	833 psig
Low Test Pressure:	780 psig

Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500-96
Hydro. Test Co.	Akri Corporation	Project No.	13-100
Test Section	PG&E T-11 Line 105N		**WATER**
File Name	RCP 61362 - T-11, L-105N		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Restrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	24.000 in.	24.000 in.	24.000 in.	24.000 in.
Wall Thickness	0.375 in.	0.250 in.	0.375 in.	0.500 in.
Inside Diameter	23.250 in.	23.500 in.	23.250 in.	23.000 in.
Spec./Grade	API5L-X52	API5L-X52	API5L-X60	API5L-X60
Length Unrestrained			58 ft	22 ft
Length Restrained	4,591 ft	15 ft		
Temperature -- On Test	64 °F	64 °F	61.0 °F	61.0 °F
Temperature -- End of Test	64 °F	64 °F	66.0 °F	66.0 °F
Pressure -- On Test	833 psig	833 psig	833 psig	833 psig
Pressure -- End of Test	780 psig	780 psig	780 psig	780 psig

Unrestrained Pipe

Sum:	Vo	1,754.01 gal / 224,514 oz.	Vtp1	1,761.90 gal / 225,523 oz.	Vtp2	1,760.67 gal / 225,365 oz.

Vo Unrestrained	1,279 gal	475 gal	
Fwp 1	1.002551	1.002551	
Fpp 1	1.002152	1.001597	
Fpt 1	1.000018	1.000018	
Fwt 1	1.000080	1.000080	
Fpwt 1 = Fpt/Fwt	0.999938	0.999938	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,285.13 gal	476.77 gal	
Fwp 2	1.002389	1.002389	
Fpp 2	1.002015	1.001495	
Fpt 2	1.000109	1.000109	
Fwt 2	1.000582	1.000582	
Fpwt = Fpt/Fwt	0.999527	0.999527	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,284.22 gal	476.45 gal	

Restrained Pipe

Sum:	Vo	101,592.01 gal / 13,003,778 oz.	Vtp1	101,979.24 gal / 13,053,343 oz.	Vtp2	101,952.53 gal / 13,049,923 oz.

Vo Unrestrained	101,254 gal	338 gal
Fwp 1	1.002551	1.002551
Fpp 1	1.001581	1.002390
Fpt 1	1.000048	1.000048
Fwt 1	1.000375	1.000375
Fpwt 1 = Fpt/Fwt	0.999674	0.999674
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	101,640 gal	340 gal
Fwp 2	1.002389	1.002389
Fpp 2	1.001481	1.002238
Fpt 2	1.000048	1.000048
Fwt 2	1.000375	1.000375
Fpwt = Fpt/Fwt	0.999674	0.999674
Vtp = Vo(Fwp)(Fpp)(Fpwt)	101,613 gal	339 gal

Combined Pipe

Sum:	Vo	103,346.03 gal / 13,228,292 oz.	Vtp1	103,741.14 gal / 13,278,866 oz.	Vtp2	103,713.19 gal / 13,275,289 oz.

Pipe Segment Volume Allowance Calculations

Company	Pacific Gas and Electric Company	Job Number	41474079
Construction Co.	ARB	Job Number	0629-53-3500-96
Hydro. Test Co.	Akri Corporation	Project No.	13-100
Test Section	PG&E T-11 Line 105N		**WATER**
File Name	RCP 61362 - T-11, L-105N		

General Pipe Data

Description	Segment 1	2	3	4
Restrained or Unrestrained?	Restrained	Restrained	Unrestrained	Unrestrained
Outside Diameter	24.000 in.	24.000 in.	24.000 in.	24.000 in.
Wall Thickness	0.375 in.	0.250 in.	0.375 in.	0.500 in.
Inside Diameter	23.250 in.	23.500 in.	23.250 in.	23.000 in.
Spec./Grade	API5L-X52	API5L-X52	API5L-X60	API5L-X60
Length Unstrained			58.00 ft	22 ft
Length Restrained	4,591 ft	15 ft		
Temperature -- On Test	63 °F	63 °F	63 °F	63 °F
Temperature -- End of Test	64 °F	64 °F	64 °F	64 °F
Pressure -- On Test				
Pressure -- End of Test				

Unrestrained Pipe

Sum:	Vo	1,754.01 gal / 224,514 oz.	Vtp1	1,753.64 gal / 224,466 oz.	Vtp2	1,753.48 gal / 224,446 oz.

Vo Unrestrained		1,279 gal	475 gal
Fwp 1		1.000000	1.000000
Fpp 1		1.000000	1.000000
Fpt 1		1.000055	1.000055
Fwt 1		1.000267	1.000267
Fpwt 1 = Fpt/Fwt		0.999788	0.999788
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)		1,278.91 gal	474.73 gal
Fwp 2		1.000000	1.000000
Fpp 2		1.000000	1.000000
Fpt 2		1.000073	1.000073
Fwt 2		1.000375	1.000375
Fpwt = Fpt/Fwt		0.999698	0.999698
Vtp = Vo(Fwp)(Fpp)(Fpwt)		1,278.80 gal	474.69 gal

Restrained Pipe

Sum:	Vo	101,592.01 gal / 13,003,778 oz.	Vtp1	101,569.67 gal / 13,000,918 oz.	Vtp2	101,560.35 gal / 12,999,725 oz.

Vo Restrained	101,254 gal	338 gal
Fwp 1	1.000000	1.000000
Fpp 1	1.000011	1.000011
Fpt 1	1.000036	1.000036
Fwt 1	1.000267	1.000267
Fpwt 1 = Fpt/Fwt	0.999769	0.999769
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	101,232 gal	338 gal
Fwp 2	1.000000	1.000000
Fpp 2	1.000014	1.000014
Fpt 2	1.000048	1.000048
Fwt 2	1.000375	1.000375
Fpwt = Fpt/Fwt	0.999674	0.999674
Vtp = Vo(Fwp)(Fpp)(Fpwt)	101,222 gal	338 gal

Combined Pipe

Sum:	Vo	103,346.03 gal / 13,228,292 oz.	Vtp1	103,323.31 gal / 13,225,384 oz.	Vtp2	103,313.83 gal / 13,224,171 oz.
1 °F Change	9.48 gal	1,213.02 oz.				

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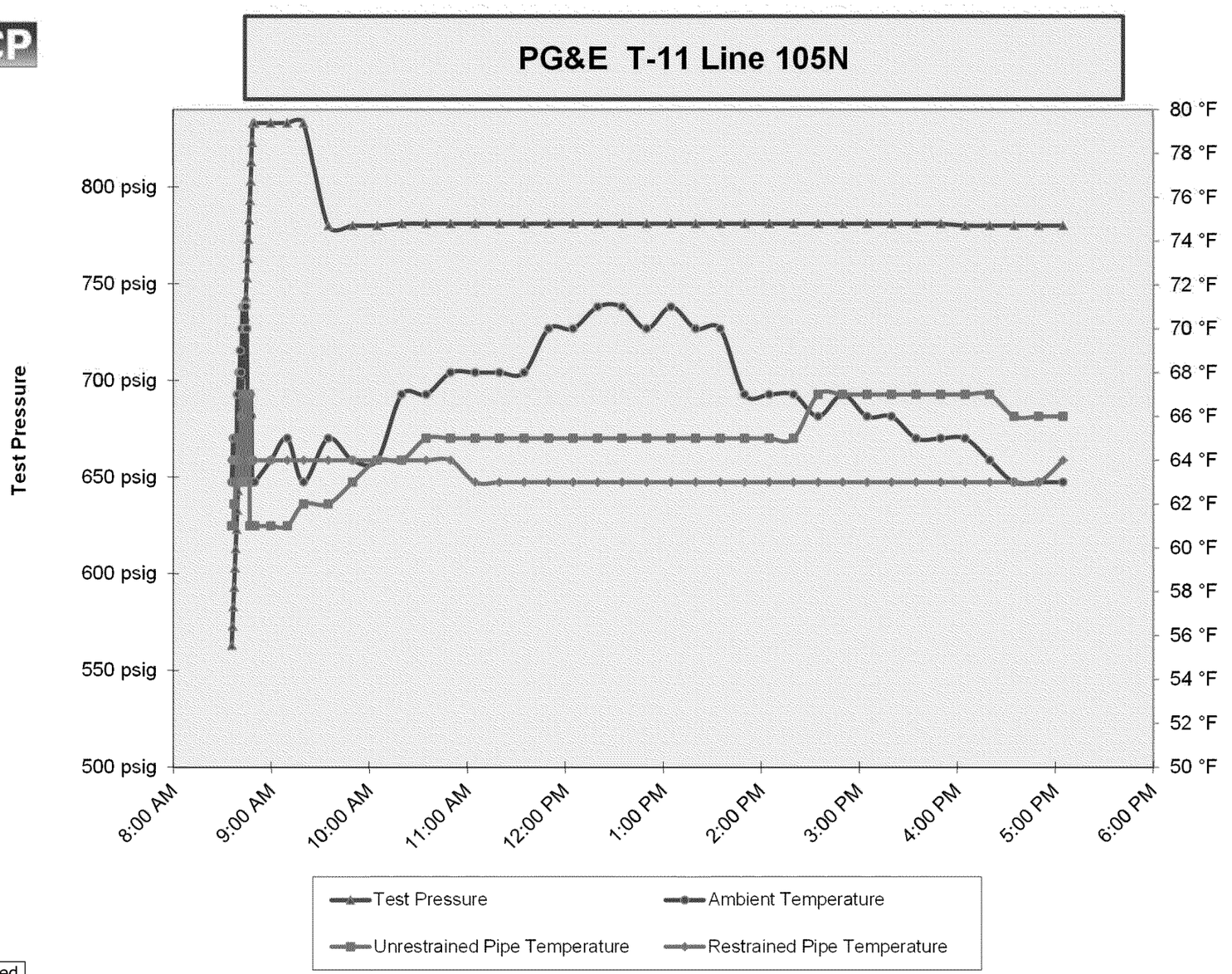
Hydrostatic Test Pipe Data Table

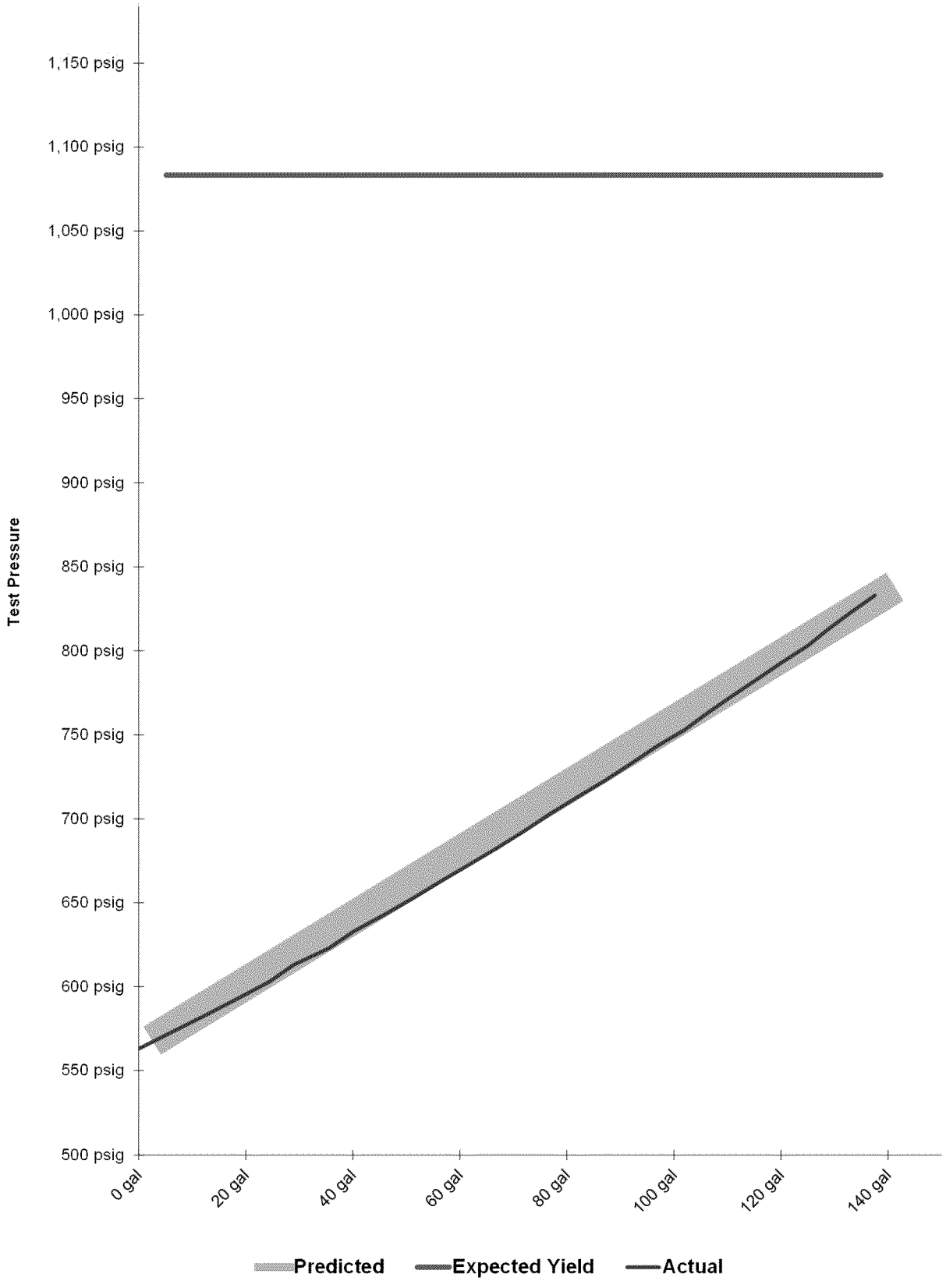
Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Type
1	4,591 ft	Restrained	24.000 in.	0.3750 in.	API5L-X52	1,625 psig	Steel	Arc Weld	DSAW
2	15 ft	Restrained	24.000 in.	0.2500 in.	API5L-X52	1,083 psig	Steel	Arc Weld	DSAW
3	58 ft	Unrestrained	24.000 in.	0.3750 in.	API5L-X60	1,875 psig	Steel	Arc Weld	DSAW
4	22 ft	Unrestrained	24.000 in.	0.5000 in.	API5L-X60	2,500 psig	Steel	Arc Weld	SM

Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	3600 Adobe Rd Petaluma, Ca 94954 Attention: Joel Mannie	41474079
Construction Company	ARB	Job Number
Address	1875 Loveridge Road Pittsburg, CA 94565 Attention: Redacted	0629-53-3500-96
Hydrostatic Test Co.	Akri Corporation	Project No.
Address	1414 Valhalla Drive Bakersfield, California 93309 Attention: Redacted	13-100
Test Section	PG&E T-11 Line 105N From: 46+03 To: 0+00	
File Name	RCP 61362 - T-11, L-105N	



Spike Pressure Test
Stress Strain Curve -- PG&E T-11 Line 105N



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Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted
563 psig	0	0.00 gal		0	0.00 gal
573 psig	174	6.23 gal	5.13 gal	0.623	0.513
583 psig	348	12.46 gal	10.26 gal	0.623	0.513
593 psig	518	18.54 gal	15.39 gal	0.608	0.513
603 psig	683	24.45 gal	20.52 gal	0.591	0.513
613 psig	808	28.92 gal	25.66 gal	0.447	0.513
623 psig	994	35.58 gal	30.79 gal	0.666	0.513
633 psig	1123	40.19 gal	35.92 gal	0.462	0.513
643 psig	1283	45.92 gal	41.05 gal	0.573	0.513
653 psig	1435	51.36 gal	46.19 gal	0.544	0.513
663 psig	1580	56.55 gal	51.32 gal	0.519	0.513
673 psig	1729	61.88 gal	56.45 gal	0.533	0.513
683 psig	1876	67.15 gal	61.59 gal	0.526	0.513
693 psig	2016	72.16 gal	66.72 gal	0.501	0.513
703 psig	2148	76.88 gal	71.86 gal	0.472	0.513
713 psig	2290	81.96 gal	76.99 gal	0.508	0.514
723 psig	2436	87.19 gal	82.13 gal	0.523	0.514
733 psig	2571	92.02 gal	87.26 gal	0.483	0.514
743 psig	2700	96.64 gal	92.40 gal	0.462	0.514
753 psig	2849	101.97 gal	97.54 gal	0.533	0.514
763 psig	2969	106.27 gal	102.67 gal	0.429	0.514
773 psig	3095	110.78 gal	107.81 gal	0.451	0.514
783 psig	3226	115.46 gal	112.95 gal	0.469	0.514
793 psig	3355	120.08 gal	118.09 gal	0.462	0.514
803 psig	3492	124.98 gal	123.22 gal	0.490	0.514
813 psig	3600	128.85 gal	128.36 gal	0.387	0.514
823 psig	3718	133.07 gal	133.50 gal	0.422	0.514
833 psig	3843	137.55 gal	138.64 gal	0.447	0.514
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000
833 psig		137.55 gal	138.64 gal	0.000	0.000

Spike Pressure Test
Stress Strain Curve -- PG&E T-11 Line 105N

Pump gal per stroke	0.056 gal/stroke
Pump Piston Diameter	1.250 in
Pump Piston Stroke	3.50 in
Pump Cylinders	3 ea
Volume check gal per stroke	0.036 gal/stroke
Volume Released (gallons)	27.00 gal
Pressure Reduced (psi)	53 psi
Maximum2	150 gal
Minimum2	0 gal
Maximum1	1,184 psig
Minimum1	500 psig
Gallons/Stroke Used	0.036 gal/stroke
Predicted Gallons/Stroke	0.036 gal/stroke
Pressure Increment	10 psi
Max Pressure	833 psig
Ground Temperature	64 °F
Ambient Temperature	61 °F

ASME B31.8 Appendix N-5

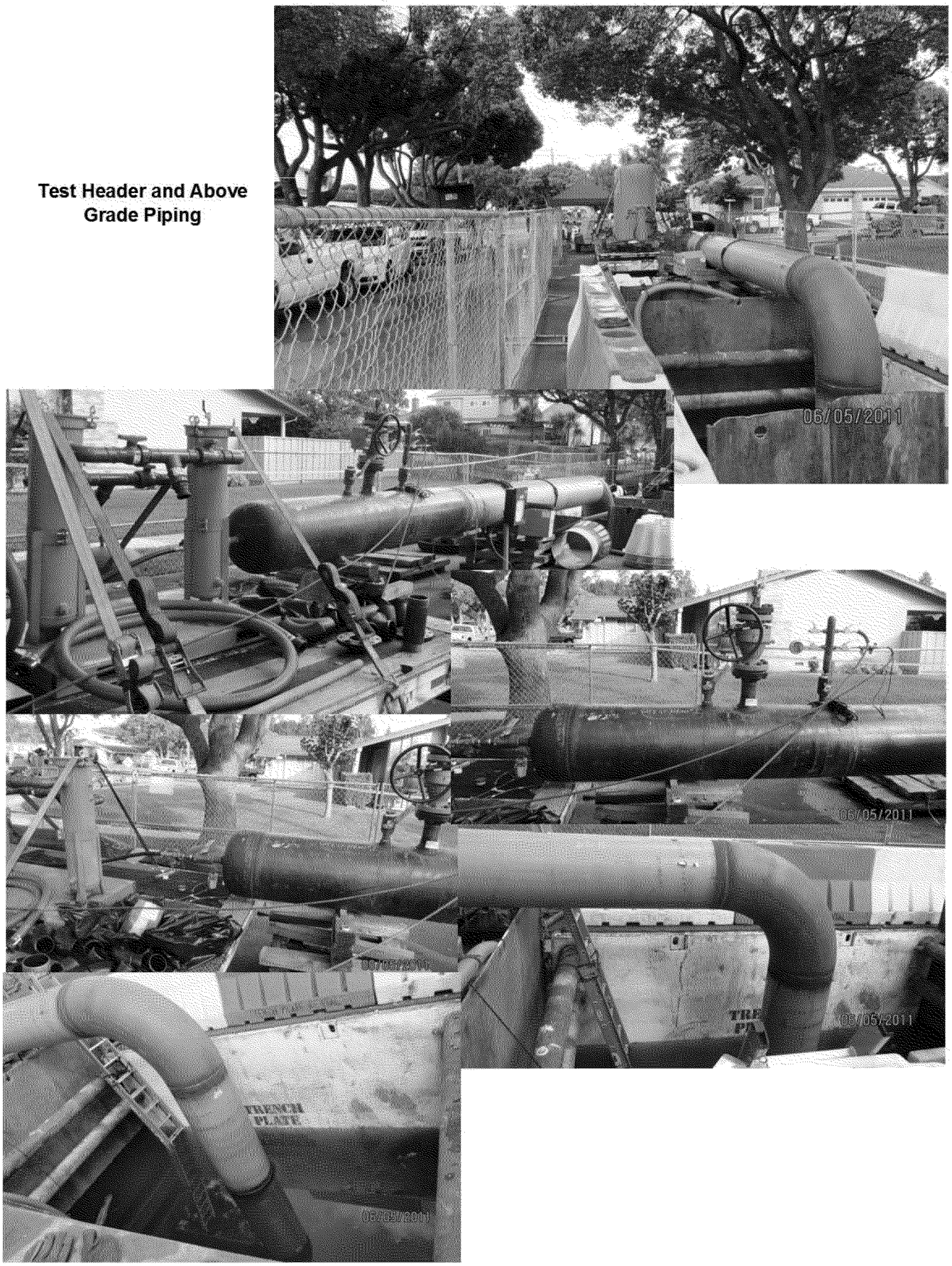
Average Actual Elastic Slope	0.509
Average Predicted Elastic Slope	0.513
Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	0.968
Established Minimum Yield Pressure B31.8 N-5 (c)(2)	833 psig
Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal

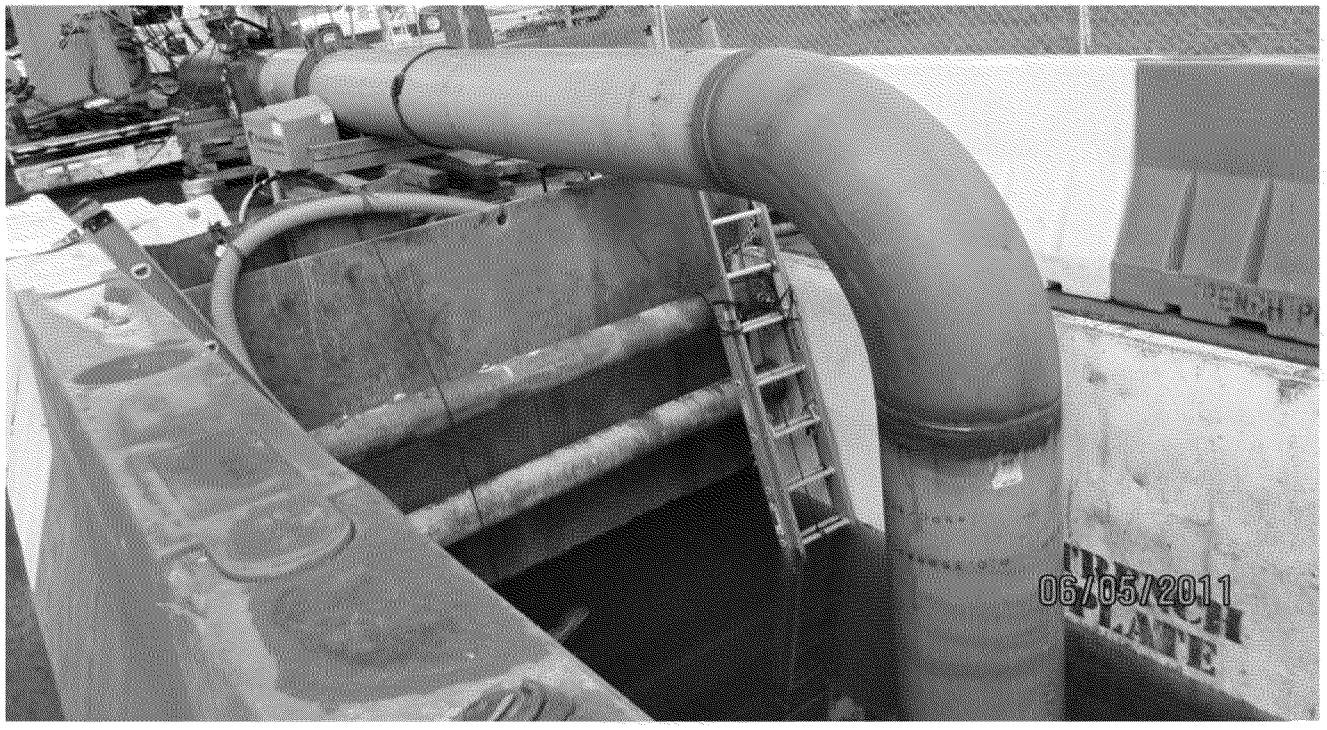
Redacted

Date

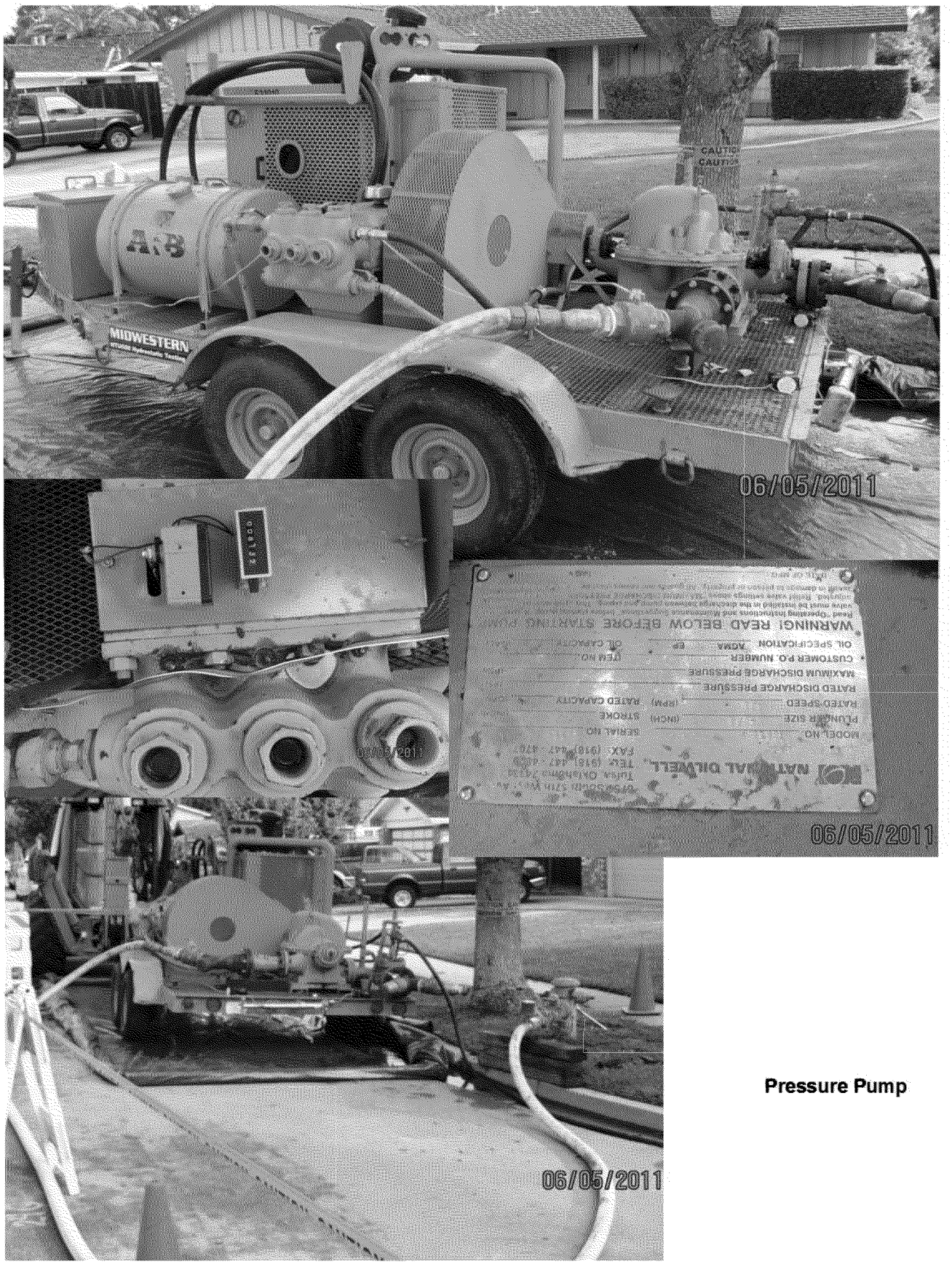
RCP

Test Header and Above Grade Piping

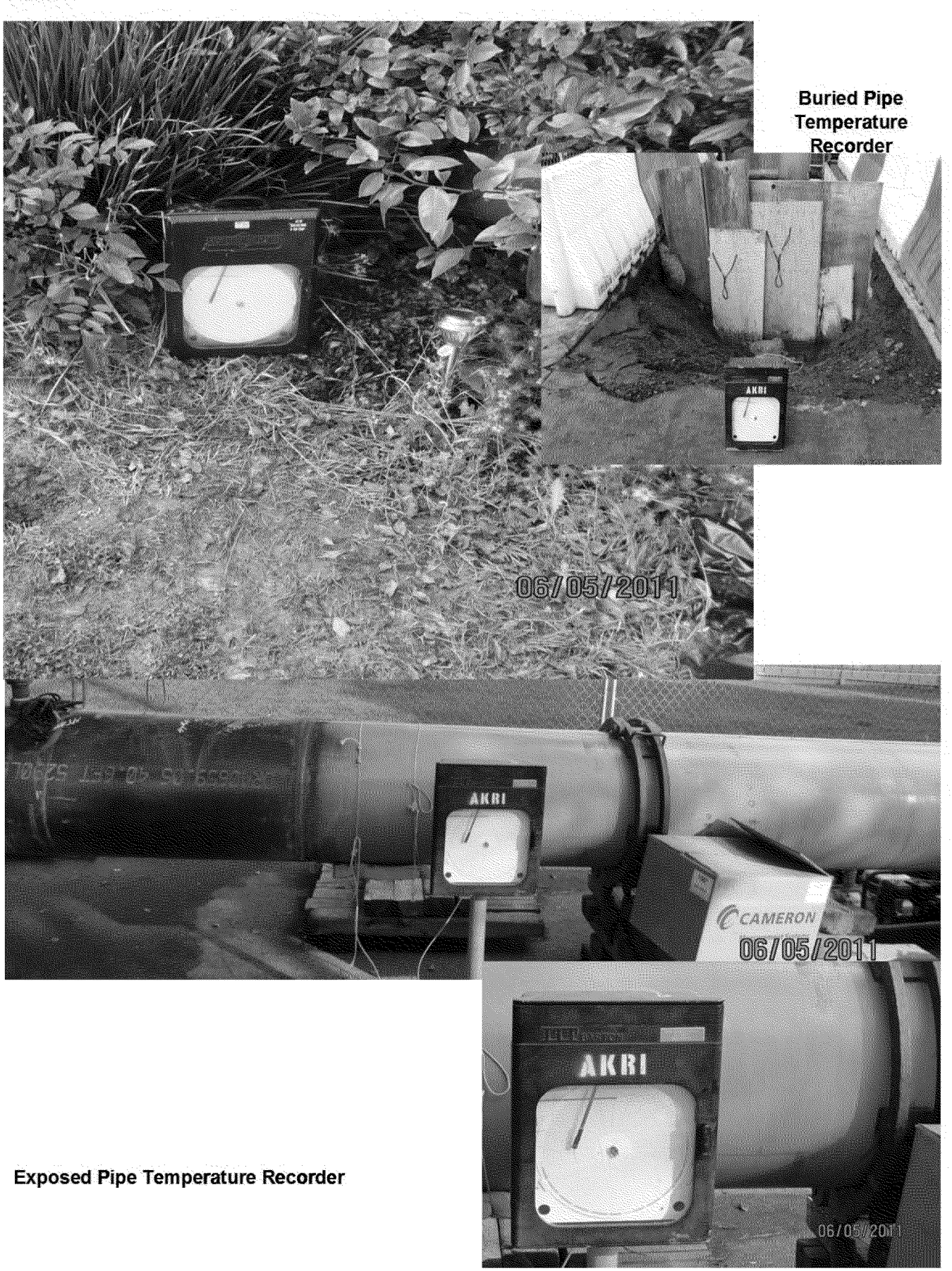




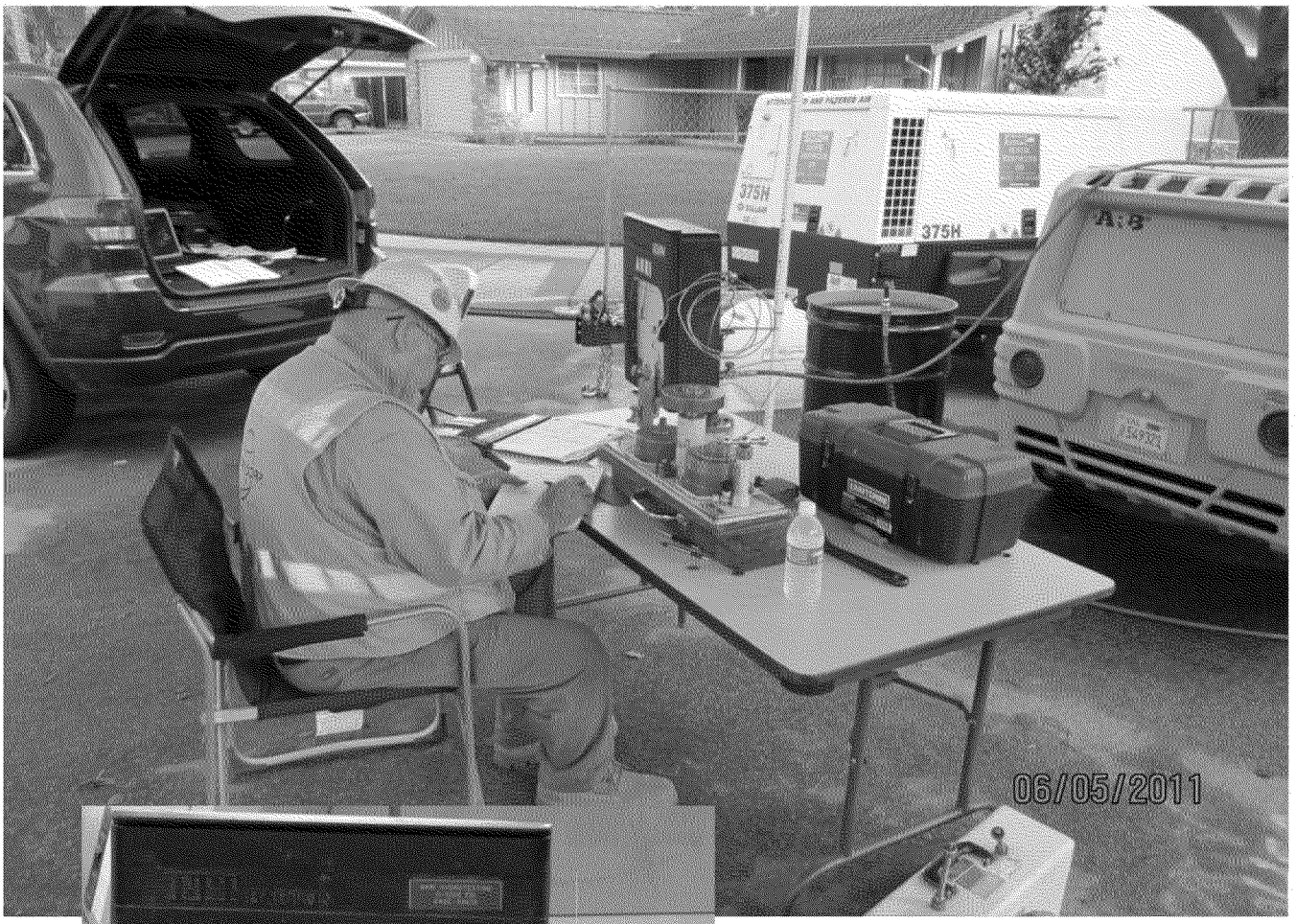
Exposed Pipe



Pressure Pump



Exposed Pipe Temperature Recorder



Test Table and Pressure Recorder

HYDROSTATIC TEST RESULTS

SHEET 1 OF 2

PIPELINE DATA

Test Date	Line #	Test ID #	Test #
SUN. 6-5-11	L-105N		13-100

Pipeline Operator	Independent Testing Firm
PACIFIC GAS & ELECTRIC COMPANY	**Akri Hydrotesting**

Kind of Test

[ ] Annual [ ] 2 year [ ] 3 year [ ] 5 year [ ] 10 year

[ ] Pre-tested pipe [ ] New [ ] Replacement [ ] Station Piping [✓] Other

Pipeline Identification (description, line number, name, pre-tested pipe, etc.)

24" L-105N, T-11

NEWARK CA

Pipeline Location (mile post, street, station, etc.)

From: MP 11.07

To: MP 11.86

Normal Product Transported

NATURAL GAS

Test Medium

[✓] Water [ ] Diesel [ ] Fuel Oil [ ] JP-5 [ ] Other

Location of Deadweight Tester	Elevation
MP 11.86	20'

Elevation of Pipeline - High Point	Elevation of Pipeline - Low Point
37'	19'

PIPE DATA

FURNISHED BY Redacted *

Pipe O.D.	Wall Thickness	Specification & Grade (SYMS)	Length of Pipe Being tested (Ft.)	Volume (Barrels)
24"	0.375"	API 5L X60	55'	
24"	0.375"	API 5L X52	4591'	
24"	0.250"	API 5L X52	15'	
24"	0.500"	API 5L X60	22'	TEST HEADS

TEST EQUIPMENT

Make of Deadweight Tester	Serial #	Date Last Calibrated
CHANDLER 2-001	21495	10-26-10
Make of Pressure Chart Recorder	**Serial #**	**Date Last Calibrated**
BARTON 242E	3962	4-4-11
Make of Temperature Recorder	**Serial #**	**Date Last Calibrated**
BARTON 265	43574	3-17-11

COMMENTS (Additional Information)

Redacted	Redacted	11-29-10

* Redacted IS A CONTRACT INSPECTOR FOR CANJ CORP. REPRESENTING PACIFIC GAS & ELECTRIC CO. ON THIS PROJECT

MINIMUM TEST PRESSURE ON DWT, 1ST 4 HOURS = 780 PSIG

2ND 4 HOURS =

SHEET 2 of 2

Akri Test # 13-100

TEST DATA

Date	Time	Dead-weight Pressure (psig)	Chart Pressure (psig)	Pipe Wall Temp (°F)	Ambient Air Temp (°F)	Buried Pipe ~~Medium~~ Temp (°F)	Test Medium Change (+) Added (-) Drained	Comments
6/5/11	1:05 PM	781	778	~~65~~ 67	70	63	~~0~~	
	1:20	781	778	~~65~~ 67	71	63	~~0~~	
	1:35	781	778	~~65~~ 67	70	63	~~0~~	
	1:50	781	778	~~65~~ 67	67	63	~~0~~	
	2:05	781	778	67	67	63	~~0~~	
	2:20	781	778	67	67	63	~~0~~	
	2:35	781	778	67	66	63	~~0~~	
	2:50	781	778	67	67	63	~~0~~	
	3:05	781	778	67	66	63	~~0~~	
	3:20	781	777	67	66	63	~~0~~	
	3:35	781	777	67	65	63	~~0~~	
	3:50	781	777	67	65	63	~~0~~	
	4:05	780	777	67	65	63	~~0~~	
	4:20	780	777	67	64	63	~~0~~	
	4:35	780	777	~~66~~ 66	63	63	~~0~~	
	4:50	780	777	~~66~~ 66	63	63	~~0~~	
	5:05 PM	780	777	66	63	64	~~0~~	
Net Change:		-53	-48	+5	~~0~~	~~0~~	~~0~~	

FAILURES DURING TEST

Location	Cause
NONE DETECTED	

CERTIFICATION

Name of Company Conducting Test

ARB INC

Redacted

Name of Independent Testing Firm Witnessing Test

Akri Hydrotesting

Name of Certified Independent Witness on Site	Date
Redacted	6-5-11
Pipeline Operator's Representative on Site	Date
Redacted	6-5-11
Name of Person Certifying Test Data for Witnessing Firm	Date
Redacted	

SHEET 2 of 2

Akri Test # 13-100

TEST DATA

Date	Time	Dead-weight Pressure (psig)	Chart Pressure (psig)	Pipe Wall Temp (°F)	Ambient Air Temp (°F)	BURIED PIPE ~~Medium~~ Temp (°F)	Test Medium Change (+) Added (-) Drained	Comments
6/5/11	1:05 PM	781	778	~~65~~ 67	70	63	0	
	1:20	781	778	~~65~~ 67	71	63	0	
	1:35	781	778	~~65~~ 67	70	63	0	
	1:50	781	778	~~65~~ 67	67	63	0	
	2:05	781	778	67	67	63	0	
	2:20	781	778	67	67	63	0	
	2:35	781	778	67	66	63	0	
	2:50	781	778	67	67	63	0	
	3:05	781	778	67	66	63	0	
	3:20	781	777	67	66	63	0	
	3:35	781	777	67	65	63	0	
	3:50	781	777	67	65	63	0	
	4:05	780	777	67	65	63	0	
	4:20	780	777	67	64	63	0	
	4:35	780	777	~~66~~ 66	63	63	0	
	4:50	780	777	~~66~~ 66	63	63	0	
	5:05 PM	780	777	66	63	64	0	
Net Change:		-53	-48	+5	~~0~~	~~0~~	0	

FAILURES DURING TEST

Location	Cause
NONE DETECTED	

CERTIFICATION

Name of Company Conducting Test

ARB INC

Redacted TECHNICAL MANAGER

Name of Independent Testing Firm Witnessing Test

Akri Hydrotesting

Name of Certified Independent Witness on Site	Date
Redacted	6-5-11
Pipeline Operator's Representative on Site	Date
Redacted	6-5-11
Name of Person Certifying Test Data for Witnessing Firm	Date
Redacted	

HYDROSTATIC TEST RESULTS

SHEET 2 OF 2

PIPELINE DATA

Test Date	Line #	Test ID #	Test #
SUN 6-5-11	L-105N	—	13-100

Pipeline Operator: PACIFIC GAS & ELECTRIC COMPANY

Independent Testing Firm: **Akri Hydrotesting**

Kind of Test

[ ] Annual [ ] 2 year [ ] 3 year [ ] 5 year [ ] 10 year

[ ] Pre-tested pipe [ ] New [ ] Replacement [ ] Station Piping [✓] Other

Pipeline Identification (description, line number, name, pre-tested pipe, etc.)

Pipeline Location (mile post, street, station, etc.)

From:

To: SEE SHEET 1 OF 2

Normal Product Transported

Test Medium

[ ] Water [ ] Diesel [ ] Fuel Oil [ ] JP-5 [ ] Other

Location of Deadweight Tester	Elevation

Elevation of Pipeline - High Point	Elevation of Pipeline - Low Point

PIPE DATA — FURNISHED BY

Pipe O.D.	Wall Thickness	Specification & Grade (SYMS)	Length of Pipe Being tested (Ft.)	Volume (Barrels)

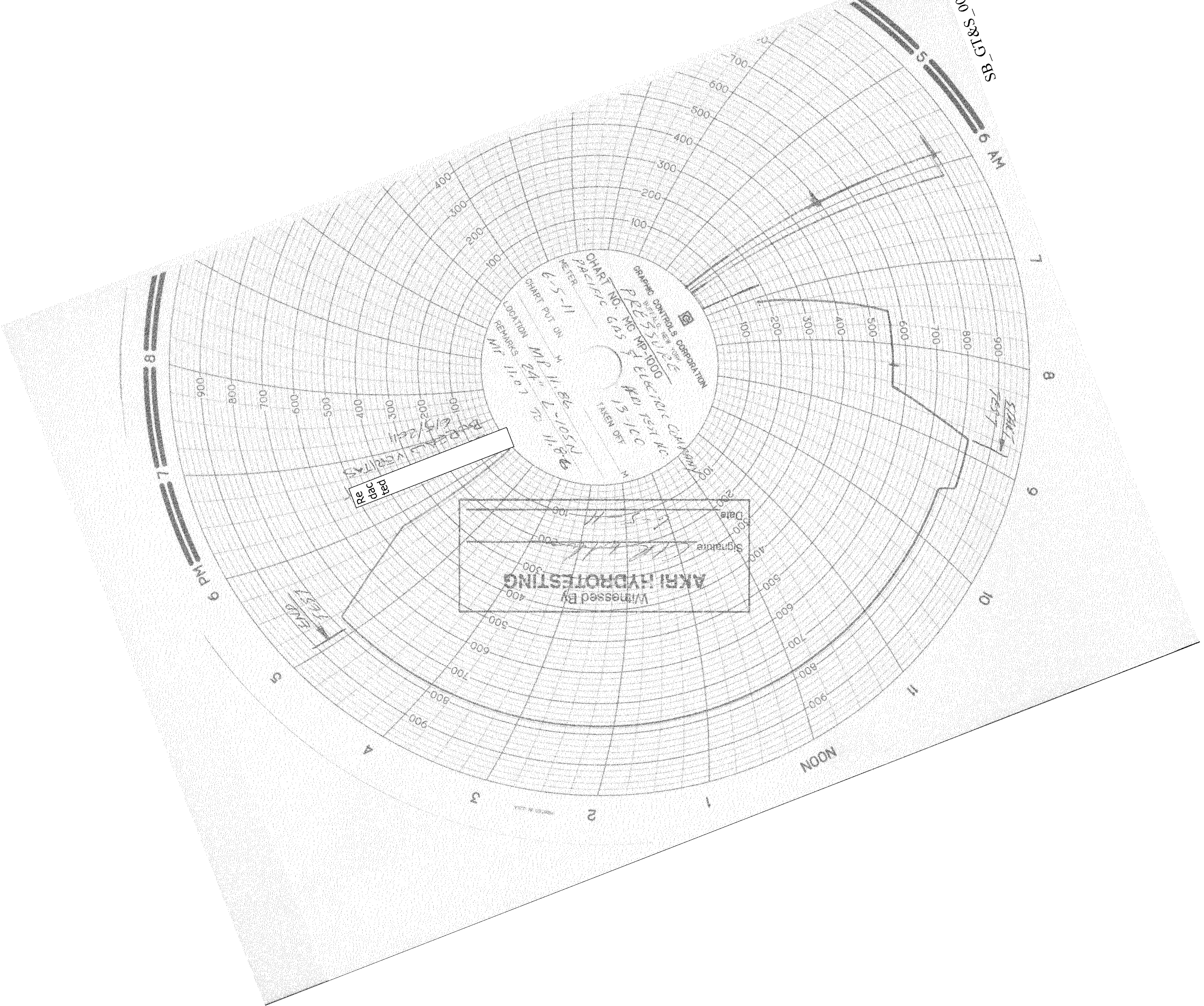
TEST EQUIPMENT

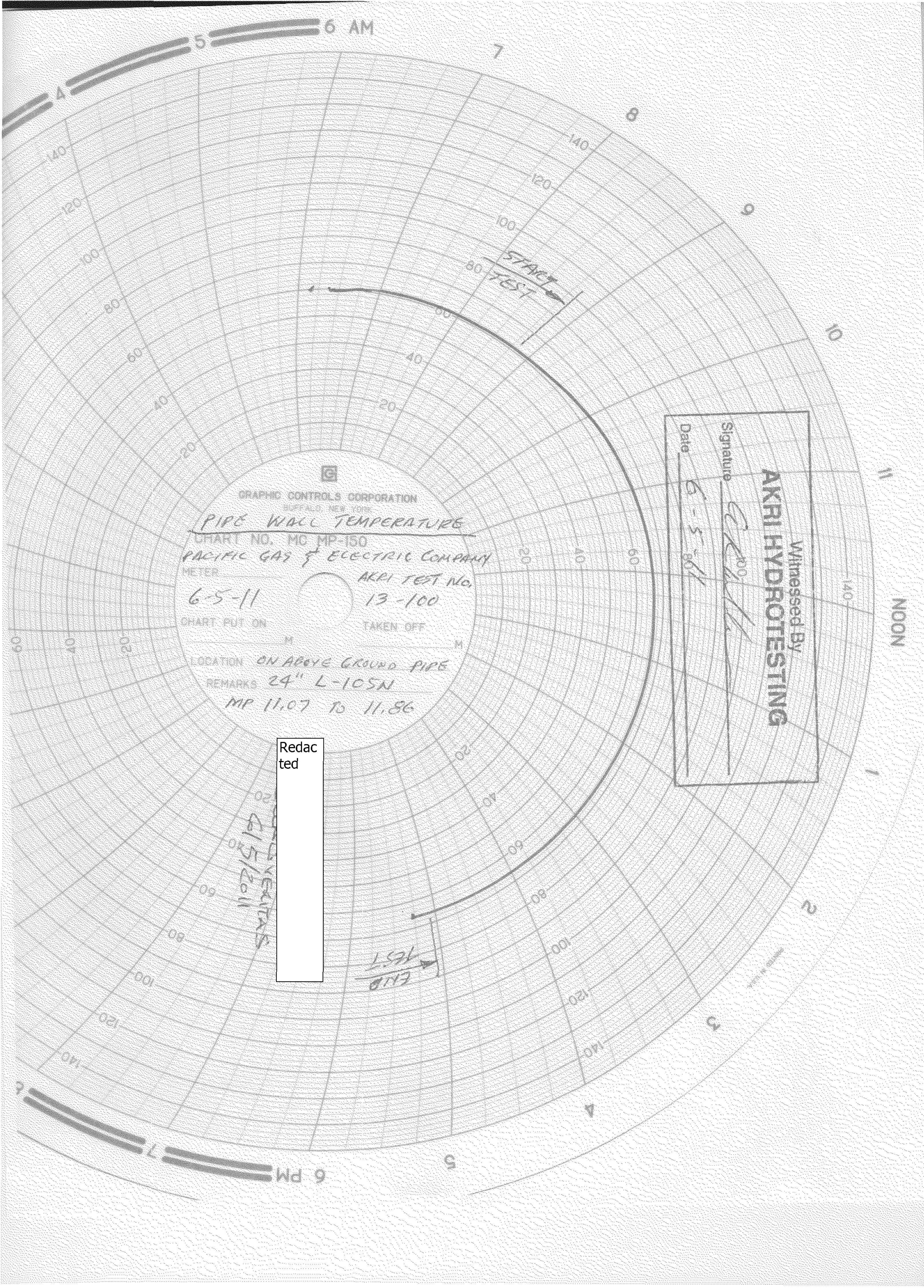
Make of Deadweight Tester	Serial #	Date Last Calibrated

Make of Pressure Chart Recorder	Serial #	Date Last Calibrated

Make of Temperature Recorder	Serial #	Date Last Calibrated

COMMENTS (Additional Information)




6 AM
7
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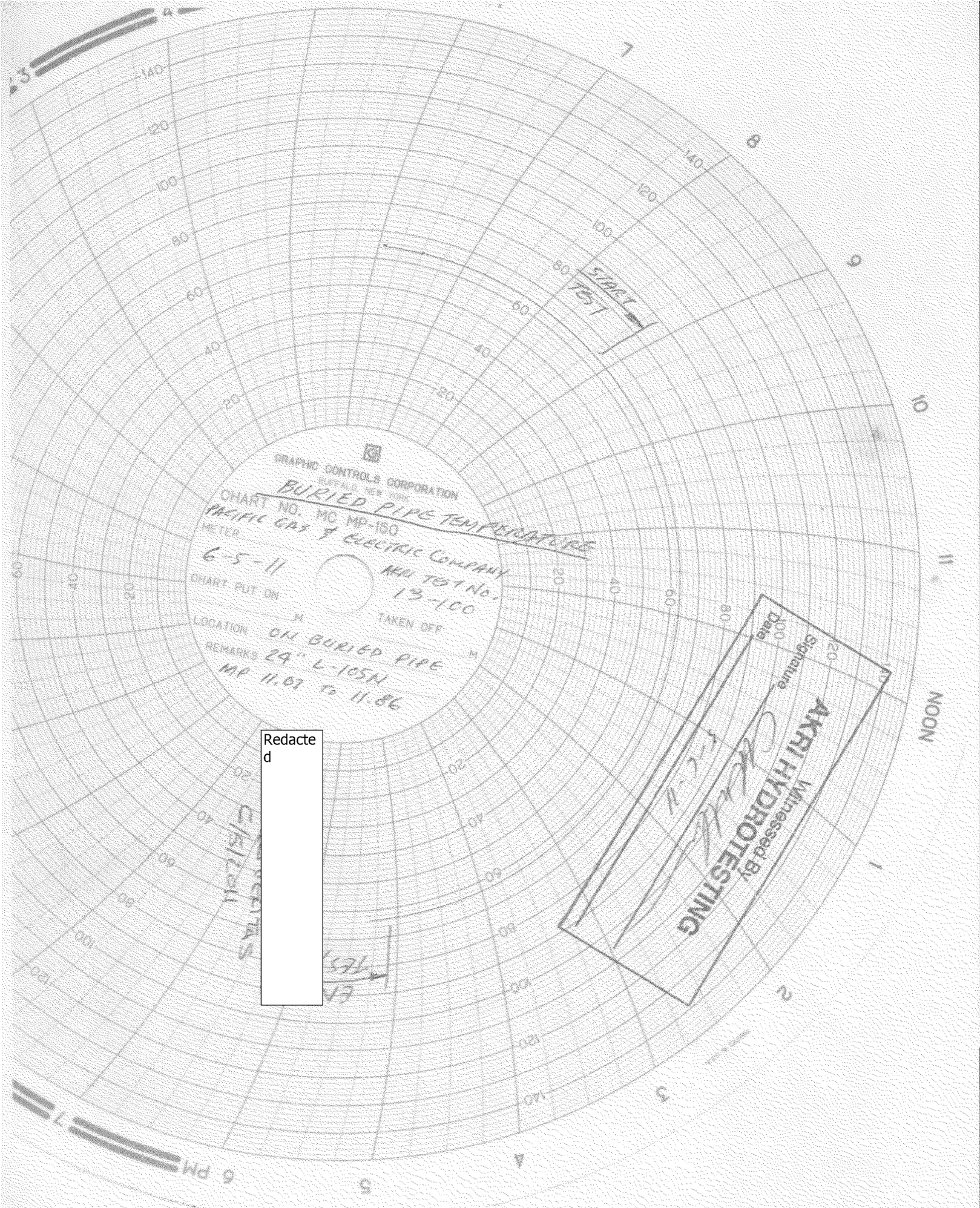
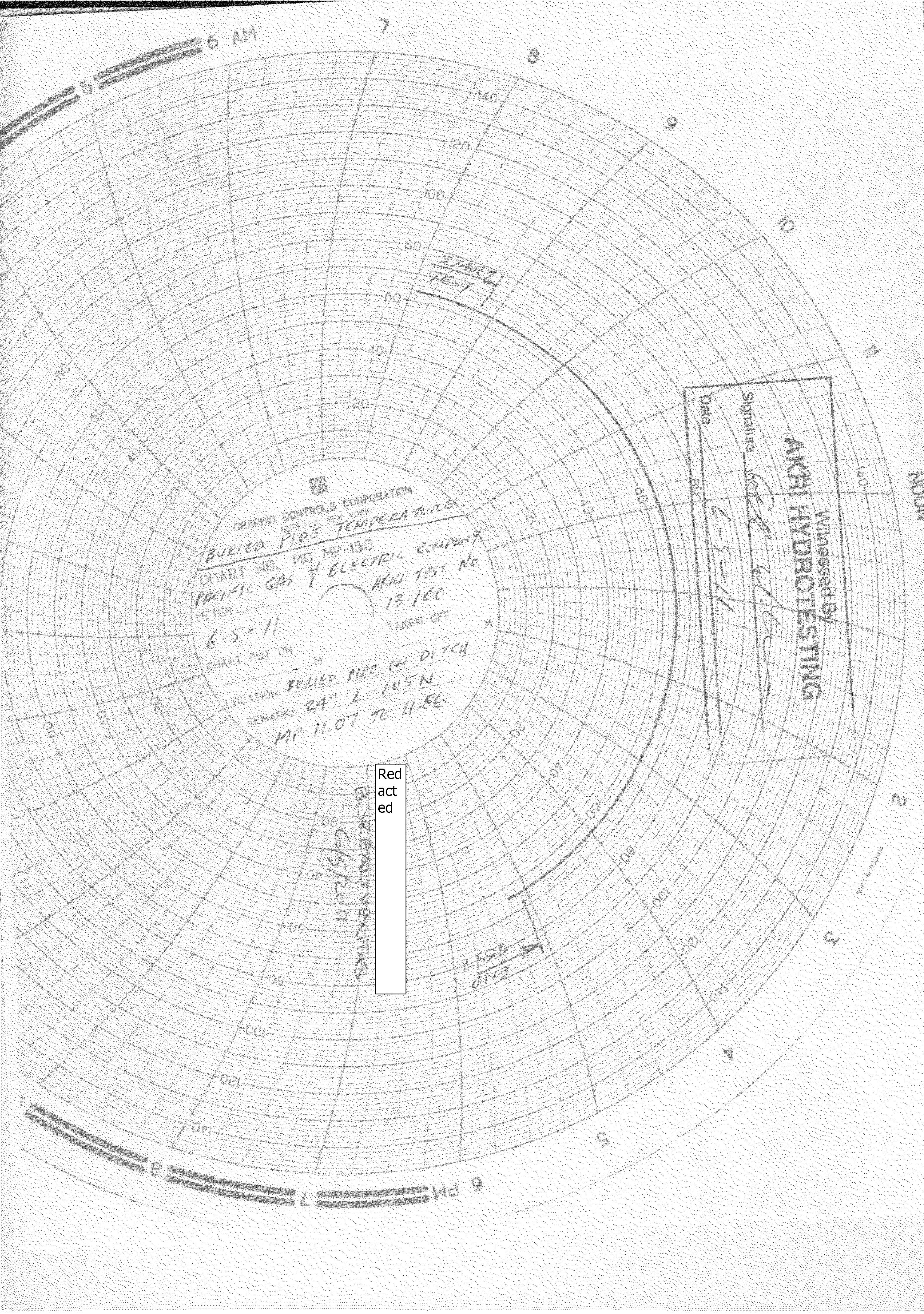
NOON
1
2
3
4
5
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
PIPE WALL TEMPERATURE
CHART NO. MC MP-150
PACIFIC GAS & ELECTRIC COMPANY
METER
AKRI TEST NO.
13-100
6-5-11
CHART PUT ON M
TAKEN OFF M
LOCATION ON ABOVE GROUND PIPE
REMARKS 24" L-105N
MP 11.07 TO 11.86
START TEST
END TEST
Witnessed By
AKRI HYDROTESTING
Signature
Date 6-5-11
Redacted
6/5/2011


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-150
METER
CHART PUT ON
M
TAKEN OFF
M
LOCATION
REMARKS
BURIED PIPE TEMPERATURES
PACIFIC GAS & ELECTRIC COMPANY
HRI TEST No.
13-100
6-5-11
ON BURIED PIPE
24" L-105N
MP 11.07 TO 11.86
START TEST
Redacted
AKRI HYDROTESTING
Witnessed By
Signature
Date
NOON


GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
BURIED PIPE TEMPERATURE
CHART NO. MC MP-150
PACIFIC GAS & ELECTRIC COMPANY
METER
AKRI TEST No. 13-100
6-5-11
CHART PUT ON M
TAKEN OFF M
LOCATION BURIED PIPE IN DITCH
REMARKS 24" L-105N
MP 11.07 TO 11.86
START TEST
END TEST
Witnessed By
AKRI HYDROTESTING
Signature
Date 6-5-11
Redacted
6/5/2011
6 AM
NOON
6 PM